

This response is intended to place the application in condition for allowance or place the application in condition for appeal. On appeal the issues will be as follows:

With respect to rejection under 35 USC Section 102:

Whether claims, drawn to an article of manufacture, for use in a particular apparatus or device environment, are anticipated by prior art which prior art does not teach, disclose or suggest such apparatus, and which prior art does not teach, disclose or suggest the selection of dopants to produce spectral features which cooperate with spectral features of the light source and sensor means.

Whether features of dependant claims as to spectral ranges, concentrations of dopants, and range of transmittance, which features are not taught, disclosed or suggested in the references of record, are anticipated by such references.

With respect to rejections under 35 USC Section 103:

Whether the rejections are made in accordance with the mandates of Graham v. Deere, 383 US 1 (1966), where the prior art does not teach, disclose or suggest the selection of dopants to produce spectral features which cooperate with spectral features of the light source and sensor means, and do not suggest any need for doping by impregnation.

#### I. Summary of the Office Action

In the office action the Examiner has made several rejections and comments which are summarized below.

Claims 34-36 were rejected under 35 USC Section 112, second paragraph.

Claims 2-15 and 37 are rejected as being anticipated under 35 USC Section 102(e) as being anticipated by Orignac et al, Applied Physics Lett, vol 69, no 7, pages 895-897 (Orignac).

Claims 2-4, 6, 7, 9-15, 19 and 37 were rejected as being anticipated under 35 USC Section 102(b) as being anticipated by Xu et al, Journal of Non-Crystalline Solids, vol. 194, pages 235-240, (1996) (Xu).

Claims 10, 12, and 37 were rejected as being obvious over Orignac and Xu under 35 USC Section 103(a).

Claims 1-20, 38 and 39 are allowable over the art of record.

Applicant will address each of the Examiner's rejections and suggestions in the discussion which follows.

## II. Discussion

### A. Rejection under 35 USC Section 112

Claims 34-36 were rejected under 35 USC Section 112, second paragraph. The Examiner contends that such claims are indefinite for failing to distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner notes that Applicant has failed to correct the dependency of such claims. The Examiner contends that such claims are dependent upon cancelled claim 33.

Reconsideration of the Examiner's rejections in this regard is respectfully requested. Applicant has amended such claims to depend on claim 39. Claim 39 defines allowable subject matter, and; therefore, Applicant respectfully submits that such claims 34-36 are in condition for allowance.

### B. Rejections under 35 USC Section 102(e) an 102(b)

The Examiner has rejected claims 2-15 and 37 under 35 USC Section 102(e) as being anticipated by Orignac. The Examiner contends Orignac teaches a waveguide which comprises an Nd or Er doped sol-gel medium, wherein Erbium nitrate is the Er salt. The Examiner contends the waveguide has light input means and means for measuring the spectral output of light. The Examiner contends that the Applicant's intended use does not distinguish the invention from Orignac.

The Examiner has rejected claims 2-4, 6, 7, 9-15 and 37 under 35 USC Section 102(b) as being anticipated by Xu. The Examiner contends Xu teaches an optical device which utilizes a doped sol-gel comprising Erbium nitrate. The Examiner contends the device has light input means and means for measuring the spectral output of light. The Examiner contends that the Applicant's intended use does not distinguish the invention from Xu.

#### 1. Applicant's characterization of the reference is unchallenged.

Applicant's characterization of Xu and Orignac have not been challenged. Although Xu and Orignac, may have investigated the spectral properties of sol-gel glass monoliths, Xu and Orignac had no appreciation that sol-gel glass monoliths had applications as a calibration medium. And, the sol-gel glass monoliths studied by Xu and Orignac would not necessarily been suitable as a calibration medium. Xu and Orignac did not select the rare earth dopants of the sol-gel glass monoliths to provide transmittance in the far UV range of the light source such that the spectral features would be discernable by the sensor. This feature is expressly recited in the present claims and is not disclosed in any manner in the references of record. This feature allows the sol-gel glass monolith to serve as a calibration medium, whereas the materials of the prior art may not.

#### 2. The rejection does not conform to the claim language.

Claim 37 is directed to the calibration medium of the present invention. Claim 37 recites cooperation between the light source, sensor assembly and the sol-gel. That is, the

sol-gel must have at least one spectral feature which corresponds to a spectral feature of the light source to allow calibration. Further, the sensor must be able to detect the spectral feature of the light source and the sol-gel monolith. This feature is not an intended use as the Examiner contends, but rather, a special feature engineered into the sol-gel based the light source and the sensor.

The rejections do not conform to the language of the claims. The Examiner has been forced to simplify the claim elements, totally discarding features of various element of the claims, in order to force a rejection.

Did Xu and Orignac teach, disclose, or suggest any calibration media in their work? The answer is no.

Did Xu and Orignac teach, disclose or suggest selecting the rare earth dopants of the sol-gel glass monoliths, which they were studying, to provide transmittance in the far UV range of the light source such that the spectral features would be discernable by the sensor? The answer is no. Xu and Orignac were apparently most interested in communications applications in which it may be undesirable to discern the spectral features.

Xu and Orignac did not teach, disclose or suggest selecting the concentration and elements of the rare earth dopants for cooperation between the light source and sensor assembly. The concentrations of rare earth dopants, to effect such cooperation are not the same concentrations used by Xu and Orignac. In order for the spectral feature to be apparent and detectable by the sensor at the light intensity produced by the light source, the rare earth dopants must have a concentration many times that found in the materials disclosed in Xu and Orignac.

The rejection comprises an inventory of parts. There is no explanation as to how such parts interact. The rejection does not address Applicant's arguments that such rare earth dopants are selected to provide spectral features discernable by the sensor at the light intensity of the light source.

3. The Examiner has misapplied the law.

The Examiner states that "Applicant's intended use as a calibration medium does not distinguish." Applicant has pointed to features of the invention which are significant changes over the prior art. The Examiner can not cavalierly dismiss such distinguishing feature. And, if, indeed, the Examiner is relying on the rule that no product patent may issue for the discovery of a new use for an old product or process, such rule is tempered by the "doctrine of slight changes". Donald Chisum, Chisum on Patents, Matthew Bender, Section 1.03[8] (1997). Chisum states the doctrine as follows:

If the old product or process must be altered (however slightly) to fit the new use discovered by the inventor, then there is no novelty bar to a patent on the product or process as altered. The structure of the old product may be very close to that of the altered product--so close that it would be normally held to anticipate if the difference in

use were not considered. Nevertheless, the difference in use will suffice to distinguish the products and prevent anticipation.

This significant feature, that such rare earth dopants are selected to provide spectral features discernable by the sensor at the light intensity of the light source, is more than a slight difference. The Examiner has been silent in addressing this significant difference. As a matter of law, such feature clearly establishes novelty.

4. Dependent claims are novel over references.

Further, the rejections fail to explain features of claims 3, 5, 7 and 8 with respect to Orignac. There is no mention in the Orignac reference of spectral features in the 200 – 300 nm range. There is no mention in the Orignac reference of fifty percent transmittance in the UV range. There is no mention in the Orignac reference of a concentration of dopants in the 6 to 10% range. These features are recited in claims 3, 5, 7 and 8. And, such claims are not anticipated by the Orignac reference.

Further, the rejections fail to explain features of claims 3 and 7 with respect to Xu. There is no mention in the Xu reference of spectral features in the 200 – 300 nm range. There is no mention in the Xu reference of fifty percent transmittance in the UV range. These features are recited in claims 3 and 7. And, such claims are not anticipated by the Xu reference.

Applicant respectfully request withdrawal of the Examiner's rejections under 35 USC Section 102 with respect to claims 2-15 and 37 in view of the Orignac reference and claims 2-4, 6, 7, 9-15 and 37 in view of the Xu reference.

C. Rejections based on 35 USC Section 103

Claims 10, 12 and 37 are rejected as being obvious over Orignac and Xu under 35 USC Section 103(a). The Examiner acknowledges that Xu and Orignac differ from the present invention in teaching in that doping by impregnation is not disclosed. The Examiner contends that it would be obvious to one of ordinary skill in the art to utilize impregnation instead of mixed doping in the inventions of Xu and Orignac.

Reconsideration of the present rejection in this regard is respectfully requested. The present rejection assumes that all the features of the present invention but for impregnation of the dopant is taught in the prior art. This is not true as discussed in the preceding section.

Xu and Orignac were primarily interested in the application of dopants to effect waveguide functions to fiber optical cables for telecommunications. These materials are not used in a concentration or in a manner analogous to the concentration of the dopants or manner of use of the present invention.

Courts have consistently applied four principles to obviousness determinations, in accordance with Graham v. Deere. First, the claimed invention must be considered as a whole. Second, the references must be considered as a whole and suggest the desirability and thus the obviousness of making the combination. Third, the references must be

viewed without the benefit of hindsight vision afforded by the claimed invention. Lastly, "ought to be tried" is not the test by which obviousness is determined. See: *Hodosh v. Locke Drug Company, Inc.*, 786, F. 2<sup>nd</sup>, 1136, 1143 No. 5, 229 USPQ 182, 187 No. 5, Fed. Cir., cert. denied 479 U.S. 827 (1986).

Applicant respectfully submits the Examiner's obviousness rejections. The Examiner's obviousness rejections are inconsistent with the principles and factual inquiries mandated by Graham v. Deere.

First, the present rejections under 35 USC Section 103 fail to view the Applicant's invention as a whole. The present rejections fail to consider the cooperation between the dopant spectral characteristics, light source and sensor assembly as now recited in claim 37. That is, the light source must have a spectral feature which corresponds to the spectral feature of the dopant which can be detected by the sensor assembly. These features are not disclosed, taught or suggested in the prior art.

The rejections based on 35 USC Section 103 do not address this feature but merely focus on the impregnation of the dopant. The Examiner argues that it would be obvious to utilize impregnation rather than direct mixing merely because it is known to do so. Clearly, the rejection fails to view the invention as a whole but merely focuses on a particular claim element.

Applicant respectfully submits many things are known, but are not obvious. The references must also be considered as a whole and suggest the desirability of making the combination. What problem is solved by impregnating the dopant in the sol-gel? Why should someone skilled in the art, reading Orignac and/or Xu, turn to impregnating the dopant in the sol-gel? These are questions the rejections should address, but fail to do so.

The impregnation of dopants is used to obtain high concentrations. These high concentrations were not necessarily desirable to Xu or Orignac.

The only reference which suggests, with respects to claim 37. The only reference which suggests impregnating a dopant to obtain the cooperation between the dopant spectral characteristics, light source and sensor assembly is the present application, with respects to claims 10 and 12. However, to rely on the teaching of the present application is hindsight. Clearly, the present rejections under 35 USC Section 103 is inconsistent with the principles and factual inquiries mandated by Graham v. Deere.

Applicant respectfully submits that all pending claims comport with 35 USC Section 103. Applicant respectfully requests withdrawal of all rejections in this regard.

#### D. Objected Claims

Applicant greatly appreciates the Examiner's indication of allowable subject matter in claims 17-20, 38 and 39. However, Applicant respectfully submits that all claims clearly define patentable subject matter.

III. Conclusion

Applicant respectfully submits that all claims are in condition for allowance which action is earnestly solicited.

Respectfully submitted,

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